

Claims

1. A communication system with reduced power variation wherein data is transmitted over a plurality of subchannels including

5 at least one means of generating information symbols,

at least one encoder for encoding information symbols into higher order channel symbols at substantially the same symbol rate, the encoding both being in response to a forward error correction scheme and including selection between redundant symbol values to reduce power variation of the combined signal, and

10 a subchannel transmitter for transmission of channel symbols on individual subchannels in a combined signal, characterized in that one channel symbol is generated for each information symbol.

2. A communication system with reduced power variation as claimed in claim 1

15 wherein the encoding of information symbols into higher order channel symbols is done independently for each subchannel.

3. A communication system with reduced power variation as claimed in claim 1 wherein the forward error correcting scheme operates on a plurality of the subchannels.

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4. A communication system with reduced power variation as claimed in claim 1 wherein the forward error correcting scheme is a trellis coding scheme.

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5. A communication system with reduced power variation as claimed in claim 1 wherein BPSK information symbols are encoded into 8PSK channel symbols.

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6. A communication system with reduced power variation as claimed in claim 1 wherein the encoder comprises a first data input for the information symbols and at least a second data input for compensation data, the communication system further comprising means for generating compensation data reducing the amplitude variations of the combined signal.

7. A communication system with reduced power variation as claimed in claim 6 wherein the means for generating compensation data comprises a memory unit with pre-calculated compensation data.

5 8. A communication system with reduced power variation as claimed in claim 6 wherein the determination of the compensation data for the current information symbols is in response to the intersymbol interference to or from surrounding symbols.

10 9. A communication system with reduced power variation as claimed in claim 6 wherein the receiver generates estimates of the compensation data and evaluates a transmission quality in response to the estimates of the compensation data.

15 10. A communication system with reduced power variation as claimed in claim 1 wherein each subchannel has an associated transmission format and at least one characteristic of the transmission format of the subchannels is different between at least two subchannels.

20 11. A communication system with reduced power variation as claimed in claim 1 wherein an Orthogonal Frequency Division Multiplex (OFDM) subchannel communication scheme is employed.

12. A communication system with reduced power variation as claimed in claim 1 wherein a multicode Code Division Multiple Access (CDMA) subchannel communication scheme is employed.

25 13. A method of reducing power variation in a communication system wherein data is transmitted over a plurality of subchannels, the method comprising generating information symbols, transmitting channel symbols on individual subchannels in a combined signal, 30 encoding information symbols into higher order channel symbols at substantially the same symbol rate, the encoding both being in response to a forward error correction scheme and including selection between redundant symbol values to reduce power variation of the combined signal, and

receiving the higher order channel symbols and regenerating the information symbols, characterized in that one channel symbol is generated for each information symbol.